



# TRANSPORTATION PERFORMANCE AUDIT BOARD

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To: House Transportation Committee  
Senate Transportation Committee  
Legislative Transportation Committee

From: Doug Hurley, Chair 

Date: January 27, 2005

Subject: Final Report — Department of Transportation Capital Project Management

I am pleased to provide you with a copy of the final report on the Overview of Washington State Department of Transportation (WSDOT) Capital Project Management. This report reflects initial work conducted for the Transportation Performance Audit Board (TPAB) by staff from the Joint Legislative Audit and Review Committee (JLARC).

Because this is the first biennium of WSDOT's new "Nickel" package, TPAB undertook a pre-audit review of WSDOT's capital management practices, which are pivotal to successful project delivery. TPAB concludes that exemplary capital project management methods and tools have been developed by WSDOT and are in use in some places in the organization, but that a significant challenge remains to extend these practices throughout the Department. As a result of the capital management review, TPAB recommends the following:

- (1) – Extending the application of existing WSDOT tools—such as Managing Project Delivery, Project Delivery Information System, and Primavera Project Planner for the Enterprise tools—and putting management steps in place to confirm their adoption across the organization;
- (2) – Developing a plan and timeline for improvements to critical path scheduling, risk management, and reporting, in response to 23 detailed recommendations issued by JLARC's engineering consultant. These recommendations are focused on (a) using existing exemplary practices in place at some projects to develop minimum standards and/or templates; (b) improving the clarity of project communication by documenting terms and definitions; and (c) confirming the consistency and currency of reporting information;
- (3) – Conducting an assessment of the effectiveness of current information systems and options for addressing any deficiencies; and
- (4) – Developing criteria for extending cutting-edge Cost Risk Estimating and Management (CREM) analyses to a wider universe of projects.

Ensuring project engineers are qualified to put these recommendations into place will take time, and, perhaps more importantly, staff training. Our report estimates WSDOT will need a year to achieve full implementation of the items identified by our consultant. The Secretary of WSDOT has concurred with our recommendations, and staff at the Department

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have agreed to report back to the Board in March 2005 on their work plan to implement TPAB recommendations, including how they will ensure the qualifications of their project management staff.

In addition, TPAB anticipates conducting a complete review of WSDOT's capital management results at the end of the 2003-2005 Biennium, the first full biennium of activity under the "Nickel" program.

I would appreciate your feedback or discussion about our report. If you or your staff have questions about the details in this letter or the report, please feel free to contact me directly, or Keenan Konopaski at JLARC, (360) 786-5187.

cc: Doug MacDonald, WSDOT Secretary  
Paula Hammond, WSDOT Chief of Staff  
Victor Moore, Director, Office of Financial Management  
TPAB Members

Attachment

## **Detailed Consultant Recommendations for Capital Project Management**

1. Adopt and implement risk management standards that require processes to formally identify, qualify and quantify project risks. These analyses should be scaled appropriately to suit the range of projects' complexity and size, and can be as simple as ranking the risks in terms of potential costs and the likelihood of occurrence. Further, risks should be documented and monitored by the team throughout the project life cycle.
2. Consider using more risk-specific cost contingencies on highway construction contracts rather than a programmatic standard.
3. Project handoffs between project engineers and/or regional managers should be minimized wherever possible. Where handoffs are planned, ensure systematic review of the project. In this regard, the Olympic Region model for managing project handoffs should be considered for wider application throughout the department.
4. Review WSF's use of recognized project management software as a model for department-wide standardization of multi-dimensional project management software.
5. Undertake an effort to review the Master Deliverable List (MDL) and the WSF work breakdown structure to capture the breadth and efficiency of these two tools for department-wide standardization.
6. Revise the WSDOT construction standard specification 1-08.3, to include additional contractor schedule requirements for large projects, consistent with language contained in regular Olympic, Eastern or WSF special provision modifications to the specification.
7. Require immediate application of the Project Delivery Information System (PDIS) schedule standards for all highway projects.
8. Augment the breadth of PDIS schedules to include details of the construction phase thus ensuring the development of schedules that encompass all phases of the project.
9. Require that project engineers have demonstrated knowledge of scheduling theory and practice sufficient to effectively apply basic concepts, or manage their application on assigned projects.
10. Develop a strategy for improving the ability to share and integrate capital project data housed in numerous independent automated systems. In the interim, continue investigating opportunities to improve interfaces between IT systems.
11. Maintain original and revised schedule and budget values to appropriately gain a perspective of baseline performance through the life of the project.
12. Establish a clear discipline for the use of work item numbers (WIN) and program item numbers (PIN) in defining projects, and explore opportunities for using technology to crosswalk departmental definitions with funding definitions.
13. Adopt an updated standard glossary of project management terms for use by the whole department. These terms should be universally applied in all forms of communication.
14. Identify effective project and regional reports in use throughout WSDOT that can be adopted for department-wide use.
15. Ensure web page information is current and accurate through regular updates.
16. Standardize fiscal reporting on internal reports to include the status of total project budget, costs and forecasts.

17. Expand web page reports to include status on select schedule milestones of interest to external stakeholders.
18. Consider using earned value and other measures of project trends in standard reports.
19. Examine the character of executive-level and project-level reporting information to ensure there exists a consistent and efficient relationship.
20. Expand project managers responsibilities in managing project's scope, schedule and costs to include deliverables produced by other regional resources, such as environmental documentation and real estate acquisition.
21. Require immediate application of Managing Project Delivery (MPD) course concepts, standards and tools as minimum standards for the management of projects, and establish a process to monitor their application.
22. Require project teams to document specific roles and responsibilities of key staff and support functions.
23. Review the current quality management practices for opportunities in which a broader quality assurance discipline may improve project performance.